Beyond Training Alone: The Role of Cohesion Maximizing Group Performance

Study Purpose

The purpose of military training is to increase individual and group performance in preparation for demanding situations such as crises and war. Too often such training is taken for granted; it fails to question what kind of training best leads to improved individual or group performance and what other variables are involved. Another gap in the previous literature is that cohesion is left out from the research designs of training and performance relations. Contrary to the literature, this research examines the impact of four different cohesion components and training quality on personal and group performance. Specifically, this article studies the major variables of conscripts' group and personal performance in the Finnish Defence Forces that predict performance and analyzes the extent to which the degree of cohesiveness and training are separately and jointly related to performance by the completion of the trainees' military obligation.

Military Training, Cohesion, and Performance

Trainee-Related Factors and Performance. Trainee-related factors have a significant effect on performance. A soldier's attitude towards military service and, especially, the level of organizational commitment, training motivation, training expectations, cognitive ability, and physical health are positively related to performance. Thus, healthy, motivated, committed soldiers will typically perform better. Actually, commitment and specific training motivation are critical prerequisites for a training system that builds individual and group performance; otherwise even the best training program will become ineffective (Cannon-Bowers, Salas, Tannenbaum, & Mathieu, 1995).

Winkler (1999) concluded that the various aptitudes of the group members which, when combined, also influence the performance level of the groups. A single team member cannot exceed the performance level achieved by the combined aptitudes of a group. Therefore, the proficiency of individuals, as individually, is not a sufficient

condition for effective group performance (Salas, Bowers, & Cannon-Bowers, 1995); but the holistic interaction of group members' individual traits (group personality composition) contributes to successful group performance (Barrick, Stewart, Neubert, & Mount, 1998; Halfhill, Nielsen, Sundtrom, & Weilbaecher, 2005).

Training and Performance. Military performance and training differ from the goals and demands of civilian education because a soldier is always a functional part of team, unit, and organization. In the military setting, individual skills alone are not adequate; team skills determine if a group will perform well or not and conversely, for successful group performance, every group member's effort is needed. Another important difference between military training and the individual-orientated education that characterizes much civilian education is the presence of organizational and institutional values; in particular, selfless service for one's country and a sense of duty to the group are emphasized (Manning, 1991). Therefore, military trainers deal with (a) individual abilities, motivation and commitment, (b) training contexts and contents, and (c) group processes all at once in planning or offering an education.

Training and performance are always related to and evaluated in terms of the task to be performed, and its unique requirements. Identifying the specific behaviors that assure good individual and, even more importantly, group performance are central for military training. Morgan et al. (1986) and Glickman et al. (1987) divided team (group) behaviors in two major behavioral categories: teamwork and taskwork. *Teamwork* consists of behaviors that are required for soldiers to cooperate whereas *taskwork* is defined by behaviors that are critical to the performance of individual subtasks.

Experiences of soldiers in primary groups moderate the extent to which soldiers weigh different team behaviors (Baker & Salas, 1996). Basically, soldiers judge their performance differently based on task, group experiences, and received training; and the activities that define effective individual and group performance change as soldiers get more training and experience performing together. Generally, experiences of team behavior and individual team behavior skills directly influence team performance (Oser, McCallum, Salas, & Morgan, 1990); this points out the importance of training teamwork (e.g., communication, cooperation, adaptability, coordination, and giving / acceptance of suggestions) in addition to task related skills (Dwyer, Oser, Salas, & Fowlkes, 1999; Morgan et al., 1986).

In summary, military training increases the level of performance when it is based on (a) individual taskwork for achieving goals (task characteristics and necessary task-related skills), (b) individual characteristics and group personality composition (soldiers' mental and physical ability and will to perform), and on (c) group functions (teamwork and team characteristics) (e.g., Salas, Bowers, & Cannon-Bowers, 1995).

Group functions are seen as crucial contributing factors for military group success, and usually the notion of *cohesion* is used when the collective effect of group factors on performance has been investigated (e.g., Zaccaro, Gualtieri, & Minionis, 1995).

Cohesion and Performance. In many meta-analyses that combine several studies, cohesion was shown to be positively related to group performance (Gully, Devine, & Whitney, 1995 (r = .27); Mullen & Copper, 1994 (r = .25); Oliver, Harman, Hoover, Hayes, & Pandhi, 1999 (r = .33)), and it is even more related to group performance than to individual performance (Gully et al., 1995; Oliver et al., 1999). Therefore, in this research, cohesion is considered along with training as a central enhancer of performance.

However, *cohesion* can be defined as a feature of the primary group, or "we-ness" (cf. Cooley, 1909, pp. 23-24). Alternatively, there are other definitions like, "the total field of forces that act on members to remain in the group" (Festinger, Schachter, & Back, 1950, p. 164); "the resultant of all the forces acting on the members to remain in the group" (Festinger, 1950, p. 274); "desire to remain in the group" (Cartwright, 1968, p. 91); or, conversely, "the resistance of a group to disruptive forces" (Gross & Martin, 1952, p. 553), and "the capacity of the primary group to resist disintegration" (Shils & Janowitz, 1948, p. 281). Some scholars have used a narrower perspective, seeing cohesion as "mutual positive attitudes among the members of a group" (Lott & Lott, 1965, p. 259). Later, tasks or goals were included in definitions of cohesion, thus seeing it as the commitment of members to the group task or, as Carron (1982, p. 124) defined it, as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives." Researchers who are especially interested in teamwork, productivity, or sport groups may find the latter type of definition attractive because the primary groups in those cases cooperate in achieving some concrete ends (aims, goals, or measured productivity).

Researchers generally accept that cohesion consists of three types of bonding: horizontal (peer bonding), vertical (leader bonding), and organizational cohesion (or commitment). Each type of bonding has two components: affective (emotional / reactive side) and instrumental (task / proactive side) (Griffith, 1988; Siebold & Kelly, 1988). In this research, the cohesion conceptualization departs from these previous definitions and models which have considered peer, leader, and organizational bonding. Cohesion is understood herein to be *the existence of positive affective and instrumental bonds between group members and between those people and their organization and institution*. In practice, those bonds are measured based on individual perceptions of their togetherness with their group, organization, and institution. Specifically in this research, the standard model of cohesion involves four (instead of three) levels of bonding: (1) peer, (2) leader, (3) organizational, and (4) institutional. The items in

the peer bonding scale measures perceptions about both affective and instrumental aspects of bonding among the peer group members and with their small groups (e.g., squad, platoon). The *Leader Bonding* scale includes items about the closest conscript leaders (squad and platoon leaders). Organizational bonding was assessed by items about unit atmosphere, experiences, and instructors whereas *Institutional Bonding* included items about affective, normative, and continuance commitment. Generally, the four component model represents a hierarchy of levels where each bonding level is related and interacts. Thus, the cohesiveness of one type of bonding increases the degree of cohesion at other levels. As mentioned above, each bonding level has affective and instrumental components.

Past research indicates that soldiers' perceived training is positively linked to their performance. Also, cohesion is considered to have a positive correlation with performance. In this article, the relations between training and cohesion, cohesion and performance, and training and performance are analyzed to determine which sets of variables are most strongly connected. Squad leaders and their subordinates are studied separately to reveal differences between those samples. Thus, the main research questions are:

1. How are conscripts' perceptions of received training related to expected group and personal performance?
2. How are peer, leader, organizational, and institutional bonding related to group and personal performance?
3. Do rank and file soldiers differ from their squad leaders in their perceptions of training, cohesion, and performance?

This article is not designed to deal with particular task-related training and cohesion variables and their impact on performance. To the contrary, the goal is rather to address more broadly the importance of both training and cohesion for individual and group performance. Therefore, measures were designed to gather the data on basic performance-related factors such as training quality and peer, leader, organizational and institutional bonding, along with some aspects concerning individual abilities and personal background. Thus, the design allowed for a wider scope of constructs to be considered in assessing their relative place in connection with cohesion, training and performance.

Method

Sample. All respondents were inducted in 2001 as the first (starting in January) or second (starting in July) contingent to an armored brigade in south-central Finland

to serve their compulsory six to 12 months conscript service. The full sample of 2,004 conscripts was just under 8% of the total 2001 initial military training population in Finland. The focus sample was 978 rank and file conscripts and 336 corporals who served 6 or 12 months. Eighty-eight percent of conscripts were 19-20 years old (3 percent were 18 year olds, and 9 percent were 21-28 year olds). Thirty-four conscripts were female.

Questionnaire Administration and Measures. Finnish language questionnaires were administered near the end of the six- or twelve-month conscript training period. The official military questionnaire covered perceptions of training quality, feedback, challenges, positive experiences during service, and squad leaders' leadership training whereas an additional questionnaire assessed conscripts' mental and physical health, adjustment to military, commitment, peer and organizational bonding, and background factors. Based on the research literature and factor analyses of conscript responses to the questionnaires, scales measuring the main constructs of interest were developed. Specifically, in the factor analysis, items whose responses loaded strongly (e.g., >.40) on the same factor and which were thought to be related to one another by the literature and interviews, were utilized as measures of over-arching constructs.

The primary measures of cohesion, training and performance are presented at Appendix. There were several training scales: *Training Information and Feedback, Training Quality,* and *Challenging Training*. Cohesion was measured using scales of every bonding dimension: peer, leader, organizational, and institutional bonding. Conscripts' perceptions of their performance were formed into two criteria scales: *Group Performance* and *Personal Performance*. Instructor's two ratings of conscript capability for wartime duties were summed to form a scale: *Individual Performance Rating*, which was used as the third criteria of performance.

Results

Means of Cohesion, Training, and Performance Scales. Table 1 presents the means and the standard deviations for both samples. Based on the means of the training scales, rank and file soldiers received training information and feedback (M = 3.4), but they did not see much quality (M = 3.1) or challenge (M = 2.9) in training. Generally, leaders got more challenge than rank and file soldiers, which was one of the major differences between these two samples. Cohesion was more positively assessed than training or performance. *Leader* and *Organizational Bonding* were almost at the same level with *Peer Bonding* at the end of service (M = 3.5-3.6). Although *Institutional Bonding* was at

the same level with other bonding elements, it had the most dramatic drop during the service (time 1 *M* = 4.0; time 2 *M* = 3.7; time 3 *M* = 3.5). A closer look revealed that affective commitment (t1 *M* = 3.5; t2 *M* = 3.0; t3 *M* = 3.0) weakened most during the service. A similar kind of drop in *Institutional Bonding* or (commitment) happened to corporals. But still, corporals are best distinguished from rank and file soldiers based on their commitment to military as an institution.

Table 1: *Some Means and Standard Deviations of Two Samples*

	Rank and File Soldiers		Corporals	
Measurement Scales	Mean	SD	Mean	SD
Group Performance	3.4	1.09	3.5	1.03
Personal Performance	3.4	.79	3.6	.69
Individual Performance	3.4	.77	3.8	.53
Training Info. and Feedback	3.4	.76	3.5	.75
Training Quality	3.1	.83	3.3	.81
Challenging Training	2.9	.94	3.4	.91
Peer Bonding	3.6	.75	3.8	.70
Leader Bonding	3.6	.77	3.9	.67
Organizational Bonding	3.6	.77	3.8	.77
Institutional Bonding	3.5	.81	4.0	.72

Note. Rank and file soldiers' n = 978, and corporals' n = 336.

Among performance measures, *Group Performance* means were just a little more positive during basic training than at the end of service (3.6 vs. 3.5 – means of the whole sample) in spite of unit training with the intention to improve squad and platoon performance. Interestingly, performance ratings by instructors had a higher mean than personal performance perceptions.

Relations between Cohesion, Training, and Performance. Relations between the three components: cohesion, training, and performance were first examined based on their zero-order correlations. The purpose of this kind of inspection was to find answers to three research questions: 1) How training and 2) peer, leader, organizational, and institutional bonding are related with group and personal performance, and 3) how rank and file soldiers and corporals differ from each other based on correlations.

In the rank and file soldiers' sample, *Group Performance* had the highest correlations with *Organizational Bonding* (r = .44) and *Peer Bonding* (r = .43), whereas the corporals' perceptions about group performance were more related with the training scales. The four strongest correlations with *Personal Performance* were with *Institutional Bonding* (r = .52), *Training Information and Feedback* (r = .51), *Training Quality* (r = .47), and *Organizational Bonding* (r = .46). Instructors' *Individual Performance Ratings* were surprisingly only weakly related with soldiers' perceptions of their training, cohesion, or performance. The second surprise was that *Individual Performance Ratings* were more related with the cohesion scales than with the scales about training perceptions: *Peer Bonding* (r = .24) and *Organizational Bonding* (r = .25) vs. *Training Information and Feedback* (r = .14). Each correlation was significant at the $p < .05$ level. The corporals' *Individual Performance Ratings* were even more weakly related with other scales. For example, perceptions about development as a leader had only a r = .05 (non-significant) correlation with instructors' ratings.

Based on correlations, *Organizational Bonding* appeared to be the key component. It was related with other cohesion elements, training scales, and all three performance criteria. For *Group Performance* cohesion plays an important role (especially peer bonding for rank and file soldiers), where *Personal Performance* was estimated based on both larger components: cohesion and training. *Individual Performance Ratings* by instructors had only a r = .24 correlation with soldiers' *Personal Performance* scale and an almost nonexistent r = .05 correlation (non-significant) with the corporals' own estimation of their personal performance.

Relations between Training, Cohesion, and Performance when Either Training or Cohesion was Controlled. Correlations showed how both training and cohesion were related with performance perceptions. Soldiers had a higher relation between cohesion and performance measures than leaders, whereas corporals had a higher correlation between training and performance. To determine which one of components (training or cohesion) had more powerful relations with performance scales, a series of partial correlations were computed.

First, partial correlations were examined between cohesion and performance controlling for the three major training scales (information, quality, and challenging training). When controlling for the training scales, *Group Performance* had the highest correlation with *Peer Bonding* (r = .28) and personal performance with *Institutional Bonding* (r = .34). *Individual Performance Ratings* had almost the same correlation with all bonding levels (r = .17–.19). Generally, cohesion elements had moderate individual correlations with performance when training was controlled (see Table 2).

Table 2: *Partial Correlations Between Cohesion and Performance Controlling for Training*

Measurement Scales	Group Performance	Personal Performance	Individual Performance Ratings
Peer Bonding	.28*** / .25***	.17*** / .25***	.19*** / .11*
Leader Bonding	.20*** / .11*	.21*** / .18***	.18*** / .07 (ns.)
Organizational Bonding	.23*** / .20***	.21*** / .14***	.19*** / .09 (ns.)
Institutional Bonding	.21*** / .25***	.34*** / .31***	.17*** / .07 (ns.)

Note. Rank and file soldiers' correlation is given first and then corporals' in each cell. Rank and file soldiers' $n = 966$, and corporals' $n = 330$.

Next are depicted partial correlations between training and performance using the bonding scales as a control (see Table 3). When controlling for the cohesion scales, *Group Performance* was related most with *Training Information and Feedback* ($r = .15$, $r = .25$), and *Training Quality* ($r = .13$, $r = .25$). Personal performance was less related with training feedback in the soldiers' sample than in corporals' answers ($r = .22$ vs. $r = .37$).

Table 3: *Partial Correlations Between Training and Performance Controlling for Cohesion*

Measurement Scales	Group Performance	Personal Performance	Individual Performance Ratings
Training Information and Feedback	.15*** / .25***	.22*** / .37***	–.03 (ns.) / .06 (ns.)
Training Quality	.13*** / .25***	.23*** / .23***	–.10*** / .03 (ns.)
Challenging Training	.12*** / .19***	.13*** / .23***	.03 (ns.) / .00 (ns.)

Note. Rank and file soldiers' correlation is mentioned first and then corporals' in each cell. Rank and file soldiers' $n = 965$, and corporals' $n = 330$.

In both samples *Training Quality* had an $r = .23$ correlation with personal performance perceptions. Corporals' personal performance was also related with *Leader Development* ($r = .25$) and leadership training quality ($r = .31$; not shown in a table). In both cases, *Individual Performance Ratings* were not related with training scales.

Based on the partial correlations, both cohesion and training had moderate zero-order correlations with the performance criteria. However, it is difficult to assess which one had a stronger relation with performance, except that instructors' performance

criteria. However, it is difficult to assess which one had a stronger relation with performance, except that instructors' performance ratings were considerably more related with the bonding scales than with training. In every case, the training scales had their highest correlation with *Personal Performance* (especially in the corporals' sample), and most of the corporals' training scales were also related with *Group Performance*.

Next, the analysis examined whether either cohesion or training scales could substitute for each other. Table 4 showed clearly the difference between summarized training and cohesion scales and their correlations with the performance criteria. Cohesion had significantly stronger partial correlation with the performance scales than training, especially with *Individual Performance Ratings*, where training was not related with the instructors' ratings. Based on these partial correlations, it is reasonable to question the extent to which training is directly related with perceived or rated performance.

Table 4: *Partial Correlations of Summarized Training and Cohesion, with Performance*

Measurement Combinations	Group Performance	Personal Performance	Individual Performance
Training (Σ) – Cohesion (Σ) controlled	.17***	.25***	–.05 (ns.)
Cohesion (Σ) – Training (Σ) controlled	.34***	.35***	.27***

Note. n = 968. Training (Σ) consisted with *Training Information and Feedback, Training Quality, and Challenging Training* scales.

These findings indicate how conscripts valued their peer, leader, organizational, and institutional bonding in the context of their performance level. Similarly and surprisingly, instructors also apparently assessed performance based more on the direct influence of cohesion than training. Common sense and findings in the literature suggest that training is needed for achieving a good performance level. Still, the tables presented in this paper indicate that the cohesion elements have strong direct effect that should also be considered when training programs are planned or evaluated.

The next logical question was what type of cohesion and training combination was most associated with strong performance. Table 5 suggests an answer. The table presents ("normal") zero-order correlations between cohesion – training combinations and performance. By adding training with each cohesion element, both *Group Perform-*

ance and *Personal Performance* correlations increased, with the improvement better in the *Personal Performance* correlations. However, the cohesion – training combinations were not able to increase the correlations with instructors' ratings much at all.

Table 5: *Zero-order Correlations Between Training – Cohesion Combinations and Performance*

Measurement Combinations	Group Performance	Personal Performance	Individual Performance
Training (Σ) + Peer Bonding	.52	.52	.24
Training (Σ) + Leader Bonding	.48	.54	.24
Training (Σ) + Organizational Bonding Bonding	.50	.55	.23
Training (Σ) + Institutional Bonding	.48	.60	.23

Note. Each correlation is significant at the $p < .001$ level (2-tailed); $n = 968$.

Comparing different kind of correlation results, it was noticed how adding Leader Bonding with the summarized training scales most increased its correlation with *Group Performance* (from $r = .37$ to $r = .48$). Still, T (Σ) + *Peer Bonding* had the strongest correlation in the column (of Table 5). *Personal Performance* was still highly related with *Institutional Bonding* (plus the training scales). The largest increase was due to adding *Peer Bonding* or *Leader Bonding* with training.

In summary, partial correlations showed that 1) both cohesion and training had a correlation with performance which is separate from each other, 2) rank and file soldiers' (when training or cohesion was controlled) had a moderate correlation between cohesion and performance and a low correlation between training and performance whereas leaders had both cohesion–performance and training–performance generally as moderately high, 3) in both samples a) *Group Performance* was related most with *Peer Bonding*, b) *Personal Performance* with *Institutional Bonding* and training scales, and c) instructors' performance ratings with *Peer Bonding*, and 4) instructors' performance ratings were not related with conscripts' training perceptions. These findings suggest that cohesion should be included in designing training programs to develop personal and group performance.

How was Performance Explained by Cohesion and Training and Other Predictors? Stepwise regression analyses were used for explaining performance and showing a) the

relative importance of different cohesion scales, b) the relative importance of training scales, and c) how much all scales explained performance. In the previous section, *Peer Bonding*, *Institutional Bonding*, and *Training Information and Feedback* turned out to be the most correlated scales depending on the type of performance criteria. Thus, these scales should be the best predictors of group and personal performance when prioritized (stepwise) regression analyses were used. Based on the results of the previous examinations, it was assumed that it would be difficult to explain much of the variance in the *Individual Performance Ratings*.

Individual Performance Ratings. First, cohesion scales by themselves explained only 2 to 10 percent and training scales 3 to 7 percent of the *Individual Performance Ratings* variance. Generally, conscripts' individual performance ratings were explained mainly based on their obedience, aptitude level, physical fitness, mental health, and *Peer Bonding* (R = .53; R^2 = .27). This model indicates that instructors gave good ratings to soldiers who showed up for training, they thought were smarter, were physically and mentally healthy, and did what they were told to do. Interestingly, *Peer Bonding* was among the best predictors, and, opposite to expectations, it was also included in the squad leaders' (corporals') model (as the 3rd predictor), when leaders and subordinates were examined separately. However, the model of variables predicting *Individual Performance Ratings* only explained 27 percent of the variance. Generally, these results are consistent with previous ones: healthy, adaptive, cognitively capable soldiers' performance is estimated to be higher than others (Cannon-Bowers et al., 1995). *Peer Bonding* in the model indicates that teamwork capability (e.g. elements presented by Morgan et al., 1986) was also estimated by the instructors and seen as a key element for *Individual Performance* in military.

Personal Performance. Cohesion and training scales each explained more of the *Personal Performance* perceptions. Cohesion scales explained 30 percent of variance of soldiers' perceptions about their personal performance, whereas training scales explained 31 to 41 percent of the variance in *Personal Performance*. Considering all scales and background items predicting *Personal Performance*, the best model was basically made of institutional and leader bonding, training, and physical health scales (R = .67; R^2 = .44). Especially, the impact of *Institutional Bonding* is worth of noting which means that soldiers estimated their expected personal performance based on their commitment. Also previous studies noted that committed soldiers perform better (Cannon-Bowers et al., 1995; Gade, Tiggle, & Schumm, 2003; Mullen & Copper, 1994; Vandenberghe et al., 2004). However, the actual relation with commitment is reciprocal; good performance (or group efficacy) may increase commitment (e.g., Mullen & Copper, 1994).

Group Performance. Using the cohesion scales, both soldiers' and their squad leaders' *Group Performance* perceptions were best explained by *Organizational* and *Peer Bonding*. Generally, for rank and file soldiers, cohesion scales explained *Group Performance* better than training scales (R^2 = .27 vs. R^2 = .23), but it was the opposite case for corporals' cohesion vs. training models (R^2 = .26 vs. R^2 = .31). Table 6 shows the best eight predictors of *Group Performance*. Particularly, results emphasize the meaning of all four bonding scales.

Table 6: *Predictors of Group Performance of Leaders and Soldiers (n = 942)*

		Cumulative Values	
Predictor scale or item	*r*	*R*	Adjusted *R* Square
Organizational Bonding	.44	.45	.20
Peer Bonding	.43	.50	.25
Training Information and Feedback	.39	.53	.28
Institutional Bonding	.39	.54	.29
Leader Bonding	.37	.55	.30
Training Quality	.27	.55	.30

Note. For *r*, the individual correlations of scales with *Group Performance* at time 3, all correlations are significant at $p < .001$.

By comparing the best *Personal* and *Group Performance* models, one can find that *Organizational* and *Institutional Bonding* were strong predictors in both models. *Peer Bonding* was really useful for understanding *Group Performance* whereas, *Leader Bonding* was more related to personal performance level. *Physical Health* was especially related to personal performance. If conscripts had received information or feedback during their training and if they had received quality training, expected group and personal performance were reported to be higher.

Findings in this section using regression models confirmed what was found previously based on zero-order and partial correlations: (a) Perceptions of training and cohesion were both important for understanding group and personal performance. (b) Training perceptions explained more *Personal Performance* than *Group Performance* while cohesion did the opposite. (c) Every bonding element was important in explaining the different kinds of performance perceptions or ratings. (d) *Group Performance* perceptions were best explained in both samples by *Peer Bonding* and training. (e) *Personal Performance* perceptions were explained more by *Institutional Bonding* (com-

mitment) than was *Group Performance*. (f) *Physical Health* was the only powerful scale besides the training and cohesion components for explaining *Individual* and *Personal Performance*.

Discussion

This article was designed to identify the major variables that predict group and personal performance and to determine the extent to which the degree of cohesiveness and training are related to performance at the end of Finnish conscript service. The major finding was that cohesion elements (peer, leader, organizational, and institutional bonding) explain both group and personal performance perceptions. Generally, both squad leaders and soldiers estimate their personal and group performance based on a) bonds with people and their organization, b) training they received, and c) their current physical fitness.

Limitations. The data do not allow for an examination of how training, cohesion, and performance relations change over the course of time or for determining the most important impacts. Also, this study did not use group measures for group performance but used only individual perceptions. This study was not related to a concrete training program, but focused on general relations between training, cohesion, and performance. It might be useful to try to study these three components in different settings connected to time restrictions (one to six months), goal-orientations, and training in teams, squads, or platoons.

Findings. First, the examination of means showed the cohesion scales were more positively rated by conscripts than training and performance. *Peer Bonding* decreased a little during the time period, which is congruent with previous findings on cohesion. The most notable drop was in *Institutional Bonding* (commitment). Although, this study was not designed to focus on the impact of decreasing commitment, the findings should be considered an important topic of future research because commitment (institutional bonding) was found to be related to performance (Gade et al., 2003; Mullen & Copper, 1994; Vandenberghe et al, 2004), satisfaction (Heffner & Gade, 2003), career intention (Gade et al., 2003), and turnover (Vandenberghe et al, 2004). Thus, decreases in *Institutional Bonding* may have several undesirable consequences.

Performance measures were related differently according to training and cohesion. *Individual Performance Ratings* by instructors were related to cohesion but not to training perceptions; and they were explained by conscript obedience, mental and physical aptitude, health, and vertical cohesion. *Expected Personal Performance* was related

more to commitment and training with some impact from horizontal cohesion (i.e., peer bonding) and physical health. Finally, *Expected Group Performance* was found to be related to all four bonding levels (peer, leader, organizational, and institutional bonding) and to only a few training scales.

The cohesion scales' relation to performance varied as a function of the type of performance assessed. *Peer Bonding* had a close connection with *Group Performance*, and corporals' *Peer Bonding* was related also to their *Personal Performance*. *Leader Bonding* was included in both the *Personal* and *Group Performance* models. It had a comparatively strong relation to performance in the rank and file soldiers' sample. The variable of *Organizational Bonding* had the strongest correlation with both training and performance; it was the foremost variable to explain *Group Performance*, whereas *Institutional Bonding* was the best predictor of *Personal Performance*.

Partial correlations revealed that both training and cohesion had an individual and direct relation to performance. In the sample of rank and file soldiers, the cohesion / performance relation had more weight than the training / performance set; whereas in the corporals' perceptions, training and performance were more strongly related to each other. One of the main findings (Table 4) showed that soldiers' perceptions of their training were not directly related to their group and individual performance, whereas cohesion had higher partial correlations with every type of performance when training was controlled. Based on this, training may have an important indirect influence through increasing cohesion. Thus, training may have a valuable impact on performance by creating or supporting bonding: (a) with peers due to better teamwork and task coordination; (b) with coaching, goal-achieving, informative leaders; (c) with organizations that provide positive experiences, opportunities for learning, something to be proud of, and a good climate for performance; and, (d) with an institution that fosters commitment. Training is important, but without assessing cohesion its results may be hard to measure and interpret. Therefore, the findings strongly suggest that in military service, team building and commitment programs under good leadership should be incorporated into training.

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